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Identification of Problems and Prospects in Library Automation: An Investigation of Modernized Libraries for Young Scientific Minds

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ABSTRACT

The study examines the pre and post library automation problems in the Libraries of Private Engineering and Management Colleges of Indore city, Madhya Pradesh, India. A well structured questionnaire method was adopted to collect the primary data from librarians and other staff who is associated with automation activities. The 25 colleges that use the library automation software were selected. 100 questionnaires were distributed and 82 fully filled questionnaires were received and analyzed. It was found that 59.75% respondents indicated inadequate technical expertise as a very high problem in pre-automation. And Poor Internet connectivity in post automation problem is very high. A considerable majority are of the view that automation will improve library image.

KEY WORDS: Library Automation, Automation problems, Prospects and Privets Colleges.

1. INTRODUCTION

In this era of information technologies, the libraries are expected to use latest technologies to provide resources more pinpointed, expeditiously and systematically than before. Therefore, the computerization of the library operations and services are an essential function in this context. Information Communication Technology (ICT) play a vital role in initiating mechanization of library system to provide right information at right time effectively and also for the smooth functioning of all other housekeeping activities.

Automated libraries can portray effective, rapid, and adequate services by implementing innovations in technology. Automation of libraries has witnessed remarkable growth in libraries. In-house activities of a library apply techniques to automate library activities through automation software or any other integrated library management software.[1] Automation can be defined as any work done with help of automatic machines like computer without any

human interface. Automation reduces human resources, saves money and time to improve quality, accuracy and precision.[2] As discussed by Das (2016) also automation is a process of using the machineries for easy working and saving human power and time. It is the technique or process of making a system operate automatically.[3]

The study has been conducted in the cleanest city of India, Indore which situated on the Malwa Plateau at 553 meters above sea level. It is the largest city in Madhya Pradesh. Indore spread over 530 square kilometers with a population of 21,70,295. It is the commercial capital of Madhya Pradesh with 87.38% literacy rate.[4&5]

2. REVIEW OF LITERATURE

Various studies and surveys have been conducted to highlight the problems confronted by the libraries in automating their house-keeping activities and services.[6] The study by J (2019)[7] concluded that 81.81% of libraries are automated, and main problems for not being automated are inadequate staff, lack of infrastructure, insufficient funds and lack of training to library staff. Gupta (2019)[8] discusses the term automation and library automation. He describes various issues and challenges faced directly or indirectly by the libraries in the process of automation. S and et al, (2018)[9] emphasized on training the library staff for maintenance of libraries and reduction of human efforts. Mohanta and Pandey (2017)[10] gave suggestions for the effective use of different electronic mode of services and activities in present automated libraries environment in Uttarakhand and Delhi. K.V and Krishnamurthy (2017)[11] reviewed journal articles, reports, monographs etc., published inside and outside India, discussing about library automation, library networking, integrated library systems, information processing, need for library automation and problems faced by library professionals. Sten and Kharakor (2016)[12] describe the issues and challenges faced during the process of automation in view of the fact that it lacks basic infrastructure and facilities. Pise (2016)[13] explains library automation is having various factors that directly or indirectly affect the progress of library automation such as management issues, resources available in libraries, skill of staff, availability of software and geographic location. KV and Krishnamurthy (2015)[14] reveal that out of 17 libraries around 6(35.29 %) libraries are using Easy Lib Software and 3(17.64%) libraries are using e-Granthalaya software.

3. OBJECTIVES OF THE STUDY

The objectives of the present study are:

- ✓ To investigate the problems faced by the library staff and authorities in pre and post library automation process in libraries of private Engineering and Management Colleges of Indore city.
- ✓ To identify the future prospects of library automation to handle the huge information and to provide prompt, efficient and effective library services.
- ✓ To understand the advantages of library automation with respect to economy in expenditure, increased use of library resources and services.
- ✓ To know the impact of library automation over the library services.

4. METHODOLOGY

The study adopted descriptive survey research design and a compact well structured questionnaire was used to collect the primary data. A sample size of 100 staff members and authority persons who are directly associated with library automation work from 25 private Engineering and Management College Libraries were selected. Out of the 100 questionnaires, 80 fully filled questionnaires were retrieved and found useful for further analysis. The data

gathered were analyzed using simple percentage, Mean, Standard Deviation (SD), and Coefficient of Variation (CV).

5. ANALYSIS AND INTERPRETATION OF DATA

Respondents were asked to respond on the various problems faced during both pre and post automation depending on the importance of the problem under five parameters, namely; very high, high, average, low, and lowest.

Table 1: Pre-Automation Problems

Problems	**No. of Respondents Indicates Pre-automation Problems**							
	Lowest	**Low**	**Average**	**High**	**Very High**	**Mean**	**SD**	**CV**
Financial crunch	7(8.53)	8(9.75)	0	22(26.82)	45(54.87)	**4.10**	**1.31**	**0.32**
Inadequate technical expertise	5(6.09)	10(12.19)	0	18 (21.95)	49(59.75)	**4.17**	**1.27**	**0.31**
Lack of authority support	4(4.87)	10(12.19)	0	21(25.60)	47(57.31)	**4.18**	**1.22**	**0.29**
Lack of trained manpower	6(7.31)	12(14.63)	0	19(23.17)	45(54.87)	**4.04**	**1.35**	**0.33**
Lack of computer knowledge	42(51.21)	19(23.17)	02(2.43)	10(12.19)	9(10.97)	**2.09**	**1.42**	**0.68**
Lack of team work	33(40.24)	24(29.26)	08(9.75)	9(10.97)	8(9.75)	**2.21**	**1.34**	**0.61**
Lack of space	14(17.07)	09(10.97)	03(3.65)	34(41.46)	22(26.82)	**3.50**	**1.43**	**0.41**
Lack of updated computers	48(58.53)	7(8.53)	01(1.21)	13(15.85)	13(15.85)	**2.22**	**1.63**	**0.73**
Lack of networking	23(28.04)	23(28.04)	02(2.43)	18(21.95)	16(19.51)	**2.77**	**1.54**	**0.56**
Retrospective conversion of data	11(13.41)	10(12.19)	04(4.87)	17(20.73)	40(48.78)	**3.79**	**1.49**	**0.39**
Lack of software knowledge	9(10.97)	9(10.97)	0	23(28.04)	41(50)	**3.95**	**1.40**	**0.35**
Extra burden	52(63.41)	14(17.07)	03(3.65)	9(10.97)	4(4.87)	**1.77**	**1.23**	**0.70**

The above table revealed that more than half (59.75%) of the respondents indicated inadequate technical expertise as very high problem in pre-automation, for 57.31% lack of authority support, for 54.87% lack of trained manpower and financial crunch, for 50% lack of software knowledge and for 48.78% retrospective conversion of data is considered to be very high problem. 41.46% respondents indicated lack of space as high problem. On the contrary a majority of 63.41% respondents indicated extra burden to be the lowest problem. Followed in the sequence were lack of updated computers by 58.53%, lack of computer knowledge by 51.21%, lack of team work by 40.24% as the lowest problems. A similar percentage of respondents i.e. 28.04% considered lack of networking as a low and the lowest problem. The mean value was also calculated to identify the pre-automation problems. As per the calculations it can be concluded that lack of authority support, inadequate technical expertise, financial crunch, lack of trained manpower and lack of software knowledge are among the major problems.

Table 2: Post Automation Problems

Problems	No. of Respondents faced Problems in Post Automation							
	Lowest	**Low**	**Average**	**High**	**Very High**	**Mean**	**SD**	**CV**
Lack of funds for improvements	3(3.65)	7(8.53)	05(6.09)	25(30.48)	42(51.21)	**4.17**	**1.11**	**0.27**
Poor and inadequate power supply	8(9.75)	8(9.75)	00	18(21.95)	48(58.53)	**4.10**	**1.37**	**0.33**
Lack of accuracy in data entry	5(6.09)	10(12.19)	06(7.31)	44(53.65)	17(20.73)	**3.71**	**1.12**	**0.30**
Poor Internet connectivity	4(4.87)	7(8.53)	01(1.21)	14(17.07)	56(68.29)	**4.35**	**1.17**	**0.27**
Lack of awareness among the users	15(18.29)	51(62.19)	02(2.43)	9(10.97)	5(6.09)	**2.24**	**1.07**	**0.48**
Technical problems	6(7.31)	4(4.87)	00	20(24.39)	52(63.41)	**4.32**	**1.19**	**0.27**
Operation of software	4(4.87)	10(12.19)	04(4.87)	42(51.21)	22(26.82)	**3.83**	**1.11**	**0.29**
Inadequate training and vender support	7(8.53)	7(8.53)	02(2.43)	19(23.17)	47(57.31)	**4.12**	**1.31**	**0.32**
Attitude of engaged staff	31(37.80)	31(37.80)	00	10(12.19)	10(12.19)	**2.23**	**1.39**	**0.62**
Poor cooperation and support	24(29.26)	36(43.90)	00	12(14.63)	10(12.19)	**2.37**	**1.37**	**0.58**
Incompatibility between hardware and software	39(47.56)	21(25.60)	00	14(17.07)	08(9.75)	**2.16**	**1.43**	**0.66**
Lack of updating the software	17(20.73)	42(51.21)	03(3.65)	12(14.63)	8(9.75)	**2.41**	**1.25**	**0.52**

Table 2 shows the problems faced in post library automation. It is clearly reflected that poor Internet connectivity is a very high problem according to 68.29% respondents, followed by poor and inadequate power supply by 58.53%, technical problems by 63.41%, inadequate training and vender support by 57.31% and 51.21% said lack of funds for improvements are major problems. 53.65% indicated lack of accuracy in data entry and 51.21% indicated operation of software as high problem. Lack of awareness among the users, lack of updating the software, poor cooperation and support and attitude of engaged staff have been indicated as low problems in surveyed libraries. The problem of incompatibility between hardware and software is the lowest with 47.56%.

As per the mean calculation the poor internet connectivity is a major post automation problem with 4.35 mean value, followed by technical problems with 4.32, lack of funds for improvements 4.17, inadequate training and vender support 4.12 and poor and inadequate power supply with 4.10 mean value.

Prospects of Library Automation

The library staff and authorities were asked to provide their responses on the prospects, advantages and impact of library automation according to the significance under five parameters namely; strongly agree, agree, neutral, disagree, and strongly disagree. The collected data has been tabulated accordingly.

Table 3: Prospects of Library Automation

Prospects	Prospects of Library Automation							
	Strongly agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**Mean**	**SD**	**CV**
Fast sharing of resources	50(60.97)	21(25.60)	09(10.97)	00	02(2.43)	**4.43**	**0.88**	**0.20**
Improve library image	60(73.17)	12(14.63)	10(12.19)	00	00	**4.61**	**0.70**	**0.15**
Very economical	30(36.58)	38(46.34)	13(15.85)	01(1.21)	00	**4.18**	**0.74**	**0.18**
High level of user satisfaction	33(40.24)	33(40.24)	12(14.63)	4(4.87)	00	**4.16**	**0.85**	**0.21**
Maximum use of resources	40(48.78)	22(26.82)	15(18.29)	4(4.87)	01(1.21)	**4.17**	**0.98**	**0.23**
Expand the library services	47(57.31)	17(20.73)	12(14.63)	03(3.65)	03(3.65)	**4.24**	**1.07**	**0.25**

Above table reflects that the percentage of respondents that strongly agree to the view that automation will improve library image are 73.17%, 60.97% with fast sharing of resources, 57.31% with expand the library services and 48.78% with maximum use of resources. A similar percentage of respondents i.e. 40.24% strongly agree and agree respectively with the parameter high level of user satisfaction. And 46.34% agree that library automation is very economical.

Similarly the mean value also shows that library automation will improve library image with 4.61, followed by fast sharing of resources 4.43, expand the library services 4.24, very economical 4.18 and maximum use of resources with 4.17 mean value.

Table 4: Advantages of Library Automation

Advantages	Advantages of Library Automation							
	Strongly agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**Mean**	**SD**	**CV**
Effective performance of services	45(54.87)	21(25.60)	12(14.63)	02(2.43)	02(2.43)	**4.28**	**0.97**	**0.23**
Easy processing of contents	24(29.26)	24(29.26)	22(26.82)	08(9.75)	04(4.87)	**3.68**	**1.14**	**0.31**
Accuracy in usage reports and statistics	58(70.73)	17(20.73)	07(8.53)	00	00	**4.62**	**0.64**	**0.14**

Promote libraries for collaboration	20(24.39)	41(50)	17(20.73)	00	04(4.87)	**3.89**	**0.94**	**0.24**
Save staff	21(25.60)	25(30.48)	17(20.73)	19(23.17)	00	**3.59**	**1.11**	**0.31**
Save time of user and staff	62(75.60)	14(17.07)	06(7.31)	00	00	**4.68**	**0.61**	**0.13**

Table 4 shows the advantages of library automation. It reveals that 75.60% strongly agree that it saves the time of user and staff members, 70.73% strongly agree to accuracy in usage reports and statistics and 54.87% to effective performance of services. Half of the respondents (50%) agree to promote libraries for collaboration and 30.48% to save staff. An equal percentage of respondents i.e. 29.26% strongly agree and agree respectively, with easy processing of contents. The calculated mean value presents the similar results regarding the advantages of library automation.

Table 5: Impact of Library Automation

Impact	**Impact of Library Automation**							
	Strongly agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**Mean**	**SD**	**CV**
Huge data can be handled	58(70.73)	15(18.29)	9(10.97)	00	00	**4.60**	**0.68**	**0.15**
Avoid duplication	58(70.73)	17(20.73)	07(8.53)	00	00	**4.62**	**0.64**	**0.14**
Prompt delivery of resources	49(59.75)	13(15.85)	10(12.19)	06(7.31)	04(4.87)	**4.18**	**1.20**	**0.29**
High and better quality services	22(26.82)	37(45.12)	14(17.09)	04(4.87)	05(6.09)	**3.82**	**1.08**	**0.28**
Promote self issue-return	42(51.21)	30(36.58)	8(9.75)	00	02(2.43)	**4.34**	**0.85**	**0.20**
Ease in functioning of library	39(47.56)	26(31.70)	11(13.41)	01(1.21)	05(6.09)	**4.13**	**1.10**	**0.27**

The analysis of response to impact of library automation is given in this table. The collected data reveals that 70.73% of the respondents strongly agree that huge data can be handled and avoid duplication. 59.75% strongly agree to prompt delivery of resources. The data also indicates that 45.12% agree with high and better quality services. 51.21% of respondents expressed that they strongly agree to promote self issue-return and 47.56% to ease in functioning of library.

The above table reflects the mean calculation also. It is clear that 4.62 mean value shows that library automation avoid duplication, 4.60 huge data can be handle, 4.34 promote self issue-return and 4.18 prompt delivery of resources.

RESULT AND DISCUSSION

The present study investigated the problems faced in library automation process. To present the results in nutshell it can be said that inadequate technical expertise and lack of authority support are the major challenges encountered in automation process of libraries. The scarcity of technical expertise of automation especially related to software can be one of the main reasons behind this problem. Additionally the reluctant attitude of the higher authorities and management teams of the private Engineering and Management colleges is also responsible. This age of ICT demands these authorities to take initiatives in collaboration with librarians and contribute for smooth execution of library services for the betterment of user community. As budget is fundamental in initiating the computerization of libraries, a considerable provision for funds must be pre-sanctioned by the institute as more than half (54.87%) of the respondents have reflected this as one of the problems. Following the sequence the next problem in post automation process is of poor Internet connectivity as said by 68.29% and inadequate power supply as pointed by 58.53% respectively. The staff members of an automated libraries work provide fluent services through machines especially library software. So the bandwidth and speed of internet connection should be increased and alternative of power supply such as UPS and inverters should be available to provide uninterrupted services. The studies conducted by Dilroshan[15], Neelakandan, Duraisekar, Balasubramani and Srinivasa (2010)[16] also have similar findings. The survey study found that respondents have many positive responses regarding the prospects of library automation and the majority of them have strongly agreed that it enhances the image of the institute library, and there are no negative responses received. 75.60% respondents strongly agree that it saves the time of users and staff members, similarly 70.73% strongly agree that it gives accuracy in usage reports and statistics and 54.87% effective performance of services. The studies of Raval (2013)[17], Thapa and Sahoo (2004)[18] supported this aspect of the present study. The study also found that automation has good impact on library environment as 70.73% strongly agree that huge data can be handled and it avoids duplication of library works. There is no negative impact of automation on library and staff rather automation facilitates them to provide better, quick and quality services.

CONCLUSION

Today automatization has become essential for sharing the resources and providing services effectively. In this ICT era libraries have started their several services through library automation software. The selected surveyed libraries of Indore city are using in-house/commercial library automation software for the same. All the libraries have been functioning very well and providing services to its user community proficiently. The responses of the library staff and higher authority members of the private College of Engineering and Management of Indore City, Madhya Pradesh are quite good and positive towards library automation and they are willing to find out the solutions of the problems faced during the various stages of library automation. They also feel that it is helpful and has much positive impact on their institutions.

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